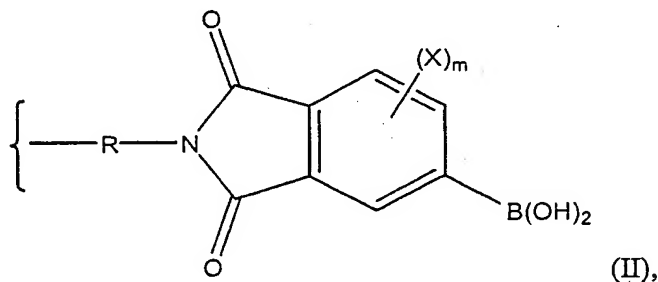
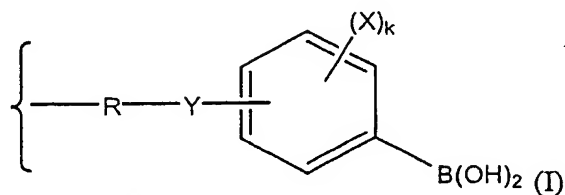


CLAIMS

What is claimed is:

- 5 1. A polymer substituted with at least one group represented by Structural Formula (I) or (II):

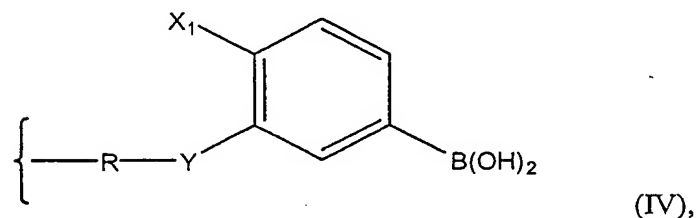
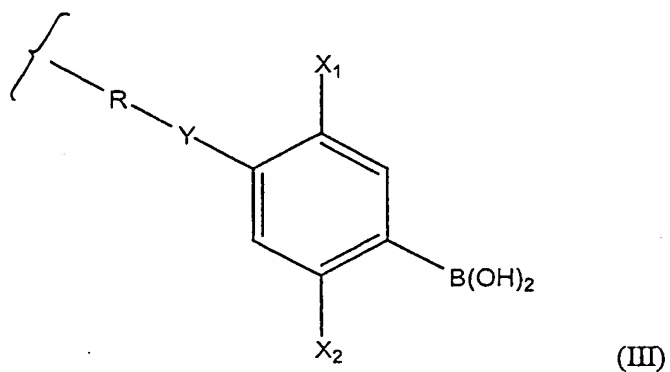


wherein:

- 10 R is a C6-C30 hydrocarbylene group optionally interrupted by one or more heteroatoms selected from the group consisting of NH, S, and O;
- each X is independently a substituted or unsubstituted alkyl group, an electron withdrawing group, or an electron donating group meta to the boronic acid moiety;
- 15 Y is $-\text{C}(\text{O})\text{Z}-$, $-\text{ZC}(\text{O})-$ or $-\text{S}(\text{CH}_2)_n-$;
- Z is a bond, CH_2S , S, NH, or O;
- m is an integer from 0 to 3;
- k is an integer from 0 to 4; and
- 20 n is an integer from 0 to 5.

2. The polymer of Claim 1, wherein each X is independently $-\text{H}$, a halogen, nitrile, ester or sulfone.

3. The polymer of Claim 2, wherein said polymer is substituted with at least one group represented by Structural Formula (III) or (IV):

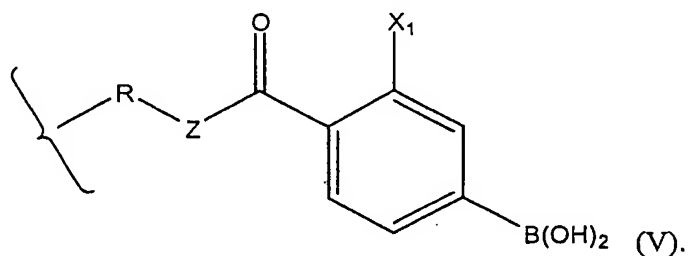


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wherein X_1 and X_2 are each independently $-H$, a halogen or nitrile; and Y is $-C(O)Z-$ or $-ZC(O)-$.

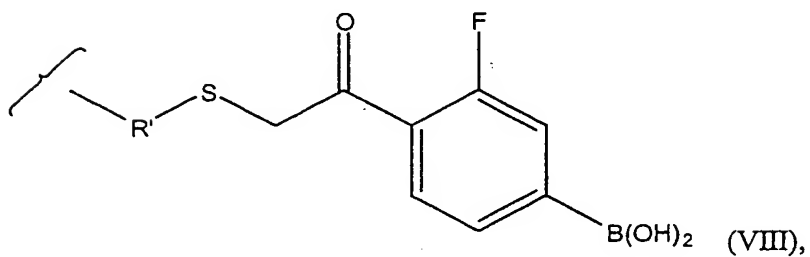
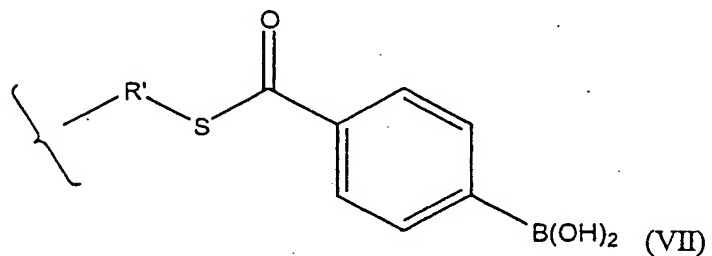
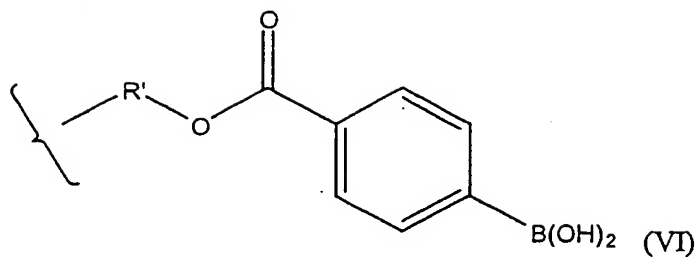
4. The polymer of Claim 3, wherein said polymer is substituted with at least one group represented by Structural Formula (V):

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5. The polymer of Claim 4, wherein said polymer is substituted with at least one group represented by Structural Formula (VI), (VII), or (VIII):

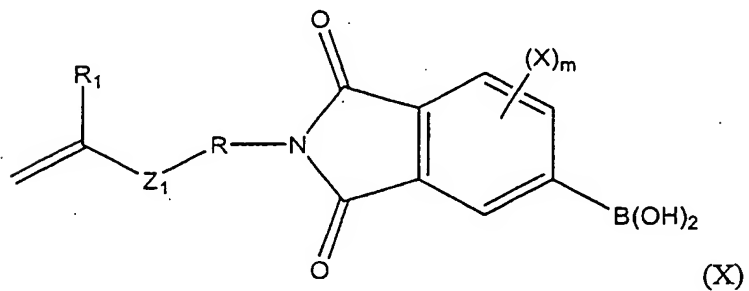
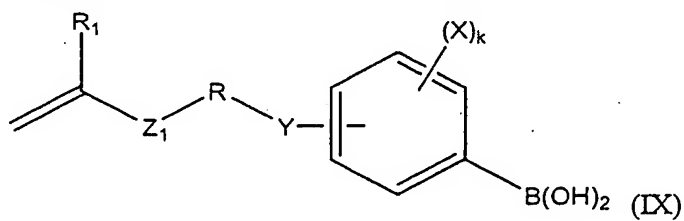
-76-



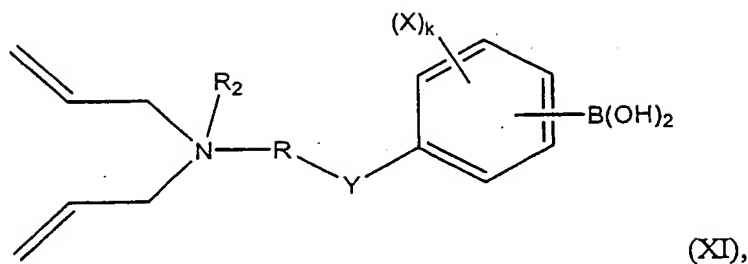
wherein R' is a C6-C12 alkylene group.

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6. A polymer comprised of polymerized monomer units, wherein the monomer unit is represented by Structural Formula (IX), (X), or (XI):



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wherein:

R is a C6-C30 hydrocarbylene group optionally interrupted by one or more heteroatoms selected from the group consisting of NH, S, and O;

R₁ is -H or a lower alkyl group;

R₂ is -H, a lower alkyl group, or is absent;

each X is independently -H, a substituted or unsubstituted alkyl group, or an electron withdrawing group;

Y is -C(O)Z-, -ZC(O)- or -S(CH₂)_n-;

Z is a bond, CH₂S, S, NH, or O;

Z₁ is a bond, -C(O)NH-, -C(O)O-, -C₆H₄O-, or -C₆H₄NHC(O)-;

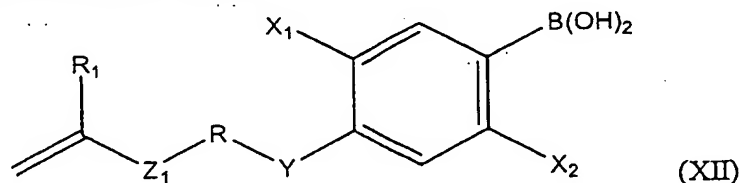
m is an integer from 0 to 3;

k is an integer from 0 to 4; and

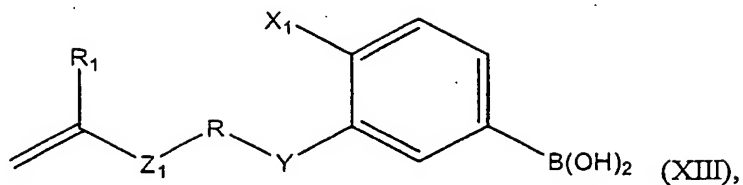
n is an integer from 0 to 5.

7. The polymer of Claim 6, wherein R₁ is -H or -CH₃; each X is independently -H, a halogen, nitrile, ester or sulfone.

8. The polymer of Claim 7, wherein said polymer is comprised of polymerized monomer units represented by Structural Formula (XII) or (XIII):



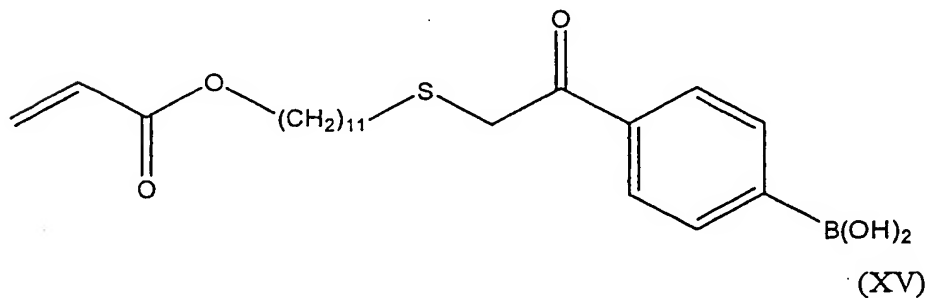
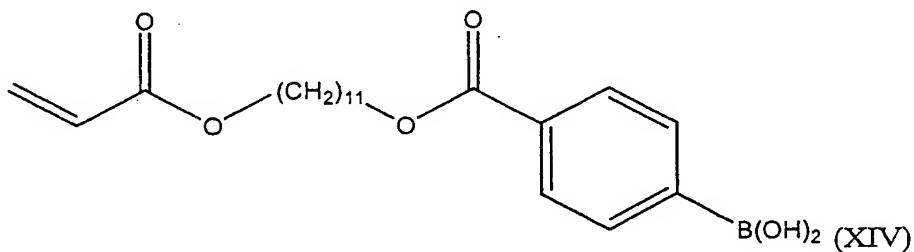
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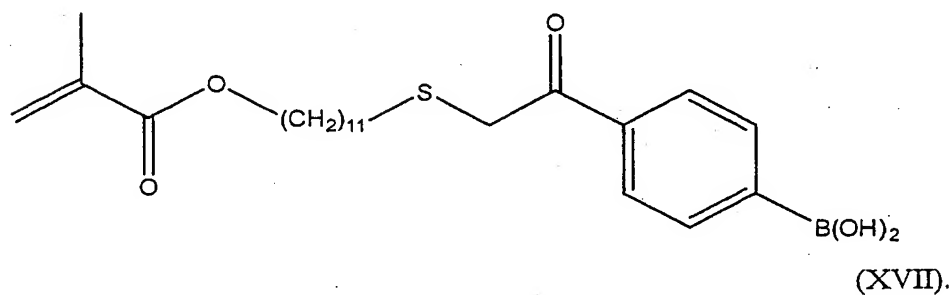
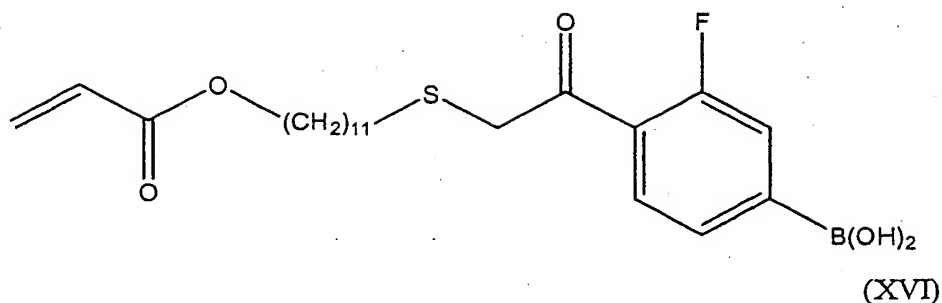
wherein X_1 and X_2 are each independently $-H$, a halogen or nitrile; and Y is $-C(O)Z-$ or $-ZC(O)-$.

- 5 9. The polymer of Claim 8, wherein R is a C6-C12 alkylene group; R_1 is $-H$; X_1 and X_2 are each independently $-H$ or $-F$; Y is $-OC(O)-$ or $-SCH_2C(O)-$; and Z_1 is $-C(O)O-$.

- 10 10. The polymer of Claim 9, wherein said polymer is comprised of polymerized monomer units, wherein the monomer unit is represented by Structural Formula (XIV), (XV), (XVI), or (XVII):



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11. The polymer of Claim 1, wherein said polymer is a copolymer.

12. The copolymer of Claim 11, wherein said copolymer comprises a hydrophobic repeat unit.

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13. The copolymer of Claim 11, wherein said copolymer comprises a cationic, anionic, zwitterionic, or neutral hydrophilic repeat unit.

14. The copolymer of Claim 13, wherein said copolymer comprises an anionic repeat unit or a zwitterionic repeat unit.

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15. The copolymer of Claim 14, wherein the anionic repeat unit or zwitterionic repeat unit comprises a sulfonic acid moiety or a salt thereof.

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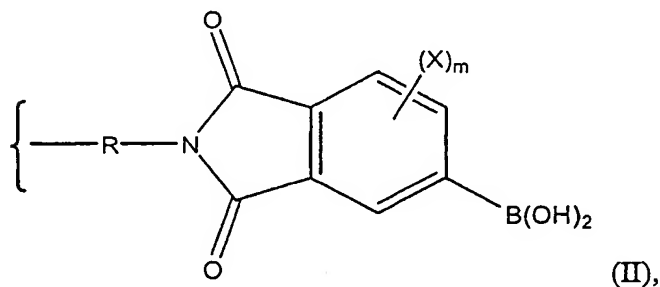
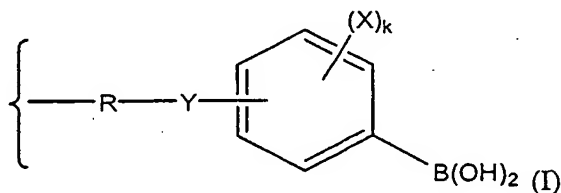
16. The copolymer of Claim 15, wherein the anionic repeat unit is polymerized 2-acrylamido-2-methyl-1-propane sulfonic acid or a salt thereof; polymerized

styrene sulfonic acid or a salt thereof; or polymerized 3-acrylatopropane sulfonic acid or a salt thereof.

- 5 17. The copolymer of Claim 13, wherein said copolymer comprises a polyether sidechain.
18. The copolymer of Claim 13, wherein said copolymer is a block copolymer, a graft copolymer, a comb copolymer, a star copolymer, a dendrimer, a hyperbranched polymer, or a crosslinked hydrogel.
- 10 19. The polymer of Claim 6, wherein said polymer is a copolymer and wherein said copolymer comprises a hydrophobic repeat unit.
20. The polymer of Claim 6, wherein said polymer is a copolymer and wherein
15 said copolymer comprises a cationic, anionic, zwitterionic, or neutral hydrophilic repeat unit.
21. The copolymer of Claim 20, wherein said copolymer comprises an anionic repeat unit or a zwitterionic repeat unit.
- 20 22. The copolymer of Claim 21, wherein the anionic repeat unit or zwitterionic repeat unit comprises a sulfonic acid moiety or a salt thereof.
23. The copolymer of Claim 22, wherein the anionic repeat unit is polymerized
25 2-acrylamido-2-methyl-1-propane sulfonic acid or a salt thereof; polymerized styrene sulfonic acid or a salt thereof; or polymerized 3-acrylato-1-propane sulfonic acid or a salt thereof.
24. The copolymer of Claim 23, wherein the copolymer is poly{4-(14'-acryloxy-3'-thia-1'-keto)tetradecyl phenyl boronic acid-co-potassium 3-sulfopropyl acrylate}}, poly{4-(14'-methacryloxy-3'-thia-1'-keto)tetradecyl phenyl
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boronic acid-co-sodium 4-styrene sulfonate}, poly{11-acryloxyundecyl(4-boronato)benzoate-co-sodium 2-acrylamido-2-methyl-1-propanesulfonate}, poly{4-(14'-acryloxy-3'-thia-1'-keto)tetradecyl phenyl boronic acid-co-sodium 2-acrylamido-2-methyl-1-propanesulfonate}, or poly{4-(14'-acryloxy-3'-thia-1'-keto)tetradecyl phenyl boronic acid-co-sodium-4-styrene sulfonate}.

25. A method for treating obesity in a mammal, comprising the step of orally administering to the mammal an effective amount of a polymer substituted with at least one group represented by Structural Formula (I) or (II):



wherein:

R is a C6-C30 hydrocarbylene group optionally interrupted by one or more heteroatoms selected from the group consisting of NH, S, and O;

R₁ is -H or a lower alkyl group;

R₂ is -H, a lower alkyl group, or is absent;

each X is independently -H, a substituted or unsubstituted alkyl group, an electron withdrawing group, or an electron donating group meta to the boronic acid moiety;

Y is -C(O)Z-, -ZC(O)- or -S(CH₂)_n-;

Z is a bond, CH₂S, S, NH, or O;

Z_1 is a bond, $-C(O)NH-$, $-C(O)O-$, $-C_6H_4O-$, or $-C_6H_4NHC(O)-$;

m is an integer from 0 to 3;

k is an integer from 0 to 4;

n is an integer from 0 to 5.

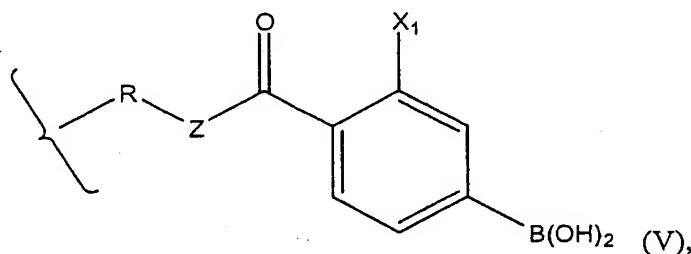
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26. The method of Claim 25, further comprising the step of administering a fat binding polymer to the mammal.

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27. The method of Claim 25, wherein each X is independently $-H$, a halogen, nitrile, ester or sulfone.

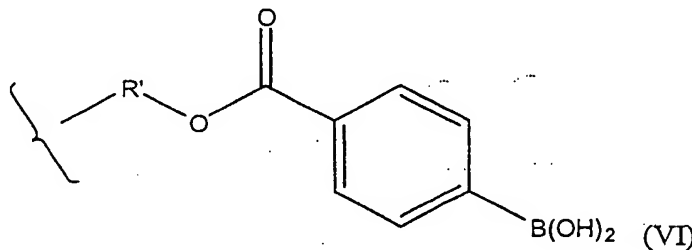
28. The method of Claim 27, wherein said polymer is substituted with at least one group represented by Structural Formula (V):



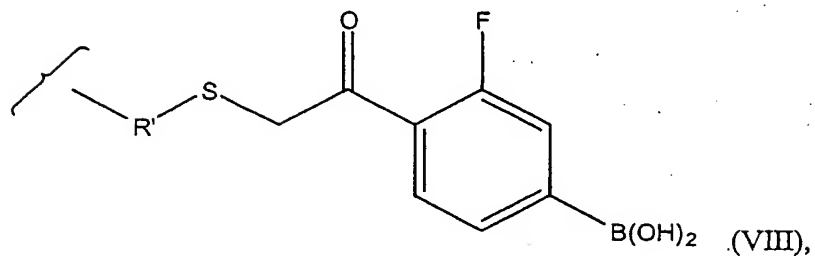
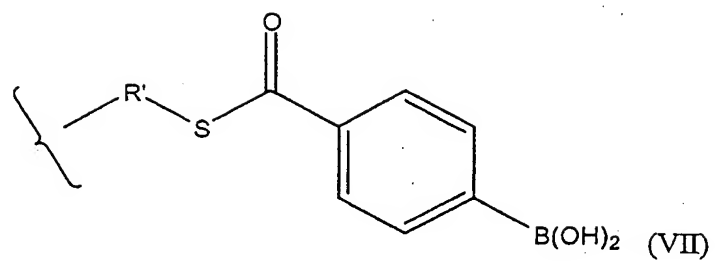
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wherein X_1 is $-H$, a halogen, or nitrile and .

29. The method of Claim 28, wherein the polymer is substituted with at least one group represented by Structural Formula (VI), (VII), or (VIII):

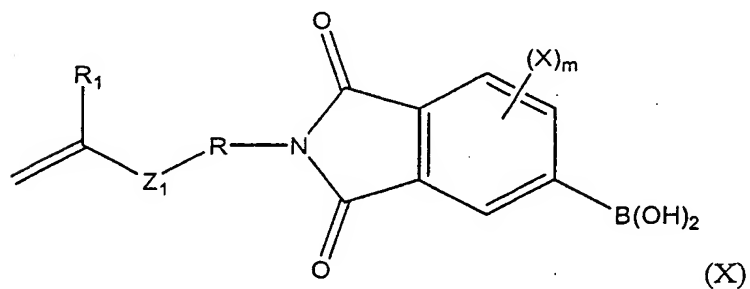
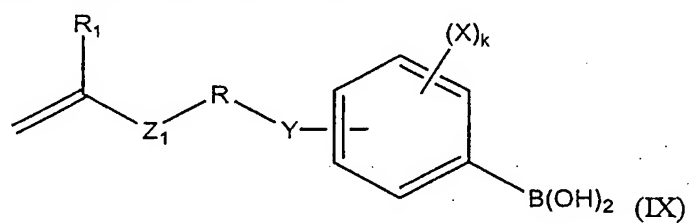


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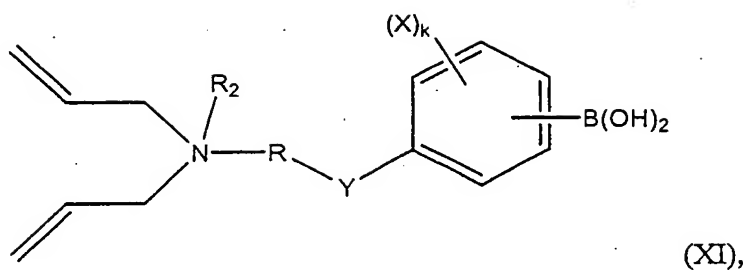


wherein R' is a C6-C12 alkylene group.

- 5 30. A method for treating obesity in a mammal, comprising the step of orally administering to the mammal an effective amount of a polymer comprised of polymerized monomer units, wherein the monomer unit is represented by Structural Formula (IX), (X), or (XI):



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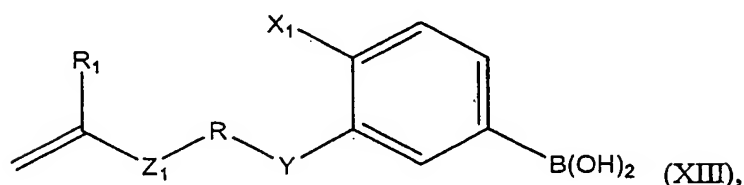
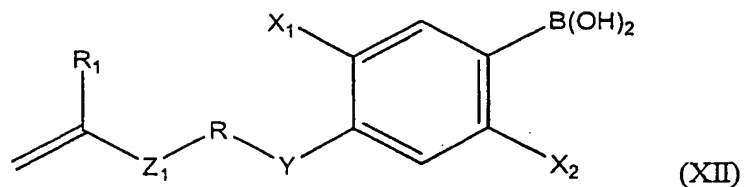


wherein:

- 5 R is a C6-C30 hydrocarbylene group optionally interrupted by one or more heteroatoms selected from the group consisting of NH, S, and O;
- R₁ is -H or a lower alkyl group;
- R₂ is -H, a lower alkyl group, or is absent;
- each X is independently -H, a substituted or unsubstituted alkyl group, or an electron withdrawing group;
- 10 Y is -C(O)Z-, -ZC(O)- or -S(CH₂)_n-;
- Z is a bond, CH₂S, S, NH, or O;
- Z₁ is a bond, -C(O)NH-, -C(O)O-, -C₆H₄O-, or -C₆H₄NHC(O)-;
- m is an integer from 0 to 3;
- k is an integer from 0 to 4; and
- 15 n is an integer from 0 to 5.

31. The method of Claim 30, further comprising the step of administering a fat binding polymer to the mammal.
- 20 32. The method of Claim 30, wherein R₁ is -H or -CH₃; each X is independently -H, a halogen, nitrile, ester or sulfone.
33. The method of Claim 32, wherein said polymer is comprised of polymerized monomer units, wherein the monomer unit is represented by Structural
- 25 Formula (XII) or (XIII):

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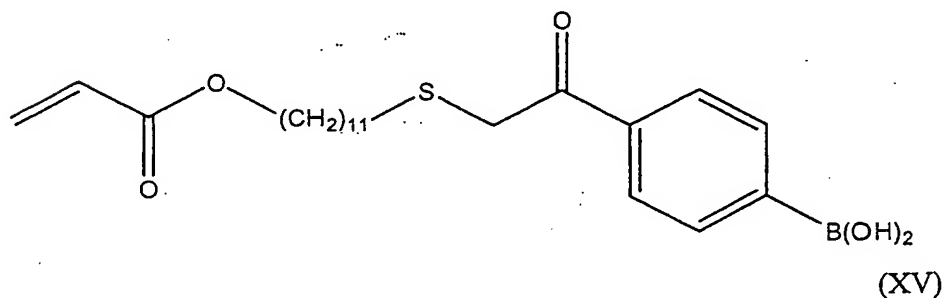
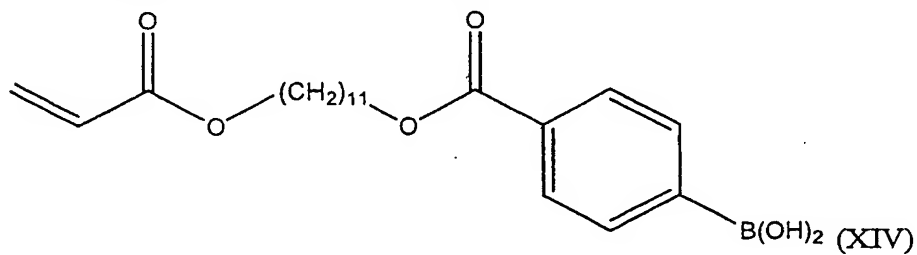
wherein X_1 and X_2 are each independently $-H$, a halogen or nitrile and Y is $-C(O)Z-$ or $-ZC(O)-$.

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34. The method of Claim 33, wherein R is a C_6 - C_{12} alkylene group; R_1 is $-H$; X_1 and X_2 are each independently $-H$ or $-F$; Y is $-OC(O)-$ or $-SCH_2C(O)-$; and Z_1 is $-C(O)O-$.

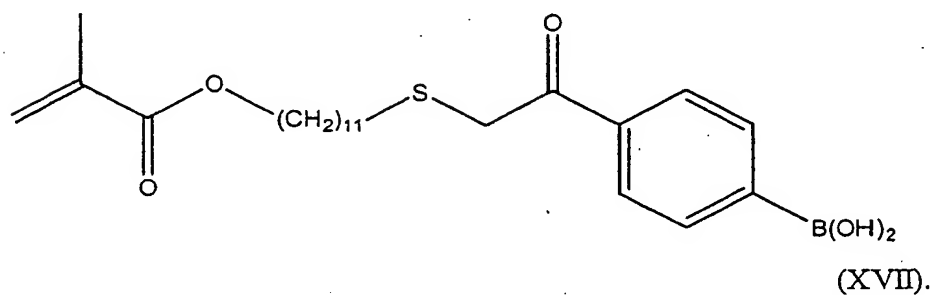
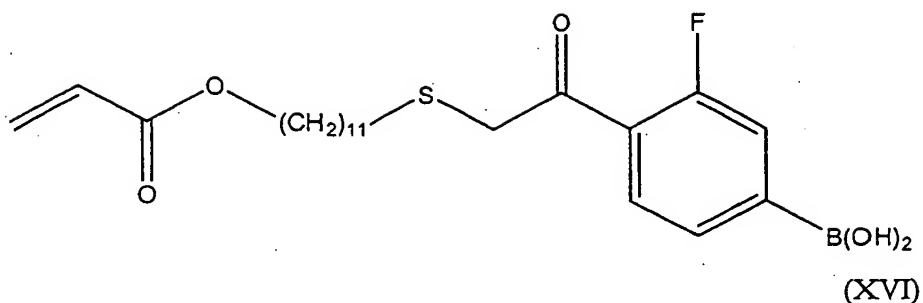
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35. The method of Claim 34, wherein said polymer is comprised of polymerized monomer units, wherein the monomer unit is represented by Structural Formula (XIV), (XV), (XVI) or (XVII):



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36. The method of Claim 30, wherein the polymer is a copolymer.

37. The method of Claim 36, wherein the copolymer comprises a hydrophobic repeat unit.

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38. The method of Claim 36, wherein the copolymer comprises a cationic, anionic, zwitterionic, or neutral hydrophilic repeat unit.

39. The method of Claim 38, wherein the copolymer comprises an anionic repeat unit or a zwitterionic repeat unit.

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40. The method of Claim 39, wherein the anionic repeat unit or zwitterionic repeat unit comprises a sulfonic acid moiety or a salt thereof.

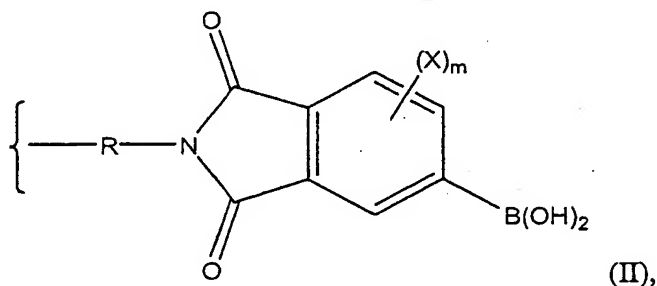
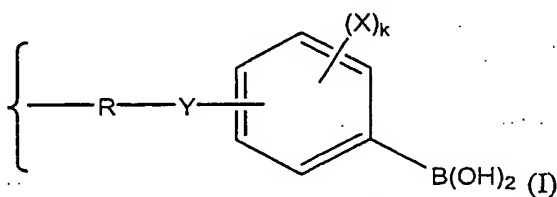
20 41. The method of Claim 40, wherein the anionic repeat unit is polymerized 2-acrylamido-2-methyl-1-propane sulfonic acid or a salt thereof; polymerized

styrene sulfonic acid or a salt thereof; or polymerized 3-acrylato-1-propane sulfonic acid or a salt thereof.

42. The method of Claim 38, wherein the copolymer is a block copolymer, a graft copolymer, a comb copolymer, a star copolymer, a dendrimer, a hyperbranched polymer, or a crosslinked hydrogel.
43. The method of Claim 33, wherein the polymer is a copolymer and wherein said copolymer comprises a hydrophobic repeat unit.
44. The method of Claim 33, wherein the polymer is a copolymer and wherein said copolymer comprises a cationic, anionic, zwitterionic, or neutral hydrophilic repeat unit.
45. The method of Claim 44, wherein the copolymer comprises an anionic repeat unit or a zwitterionic repeat unit.
46. The method of Claim 45, wherein the anionic repeat unit or zwitterionic repeat unit comprises a sulfonic acid moiety or a salt thereof.
47. The method of Claim 46, wherein the anionic repeat unit is polymerized 2-acrylamido-2-methyl-1-propane sulfonic acid or a salt thereof; polymerized styrene sulfonic acid or a salt thereof; or polymerized 3-acrylato-1-propane sulfonic acid or a salt thereof.
48. The method of Claim 47, wherein the copolymer is poly{4-(14'-acryloxy-3'-thia-1'-keto)tetradecyl phenyl boronic acid-co-potassium 3-sulfopropyl acrylate}}, poly{4-(14'-methacryloxy-3'-thia-1'-keto)tetradecyl phenyl boronic acid-co-sodium 4-styrene sulfonate}, poly{11-acryloxyundecyl(4-boronato)benzoate-co-sodium 2-acrylamido-2-methyl-1-propanesulfonate}, poly{4-(14'-acryloxy-3'-thia-1'-keto)tetradecyl phenyl boronic acid-co-

sodium 2-acrylamido-2-methyl-1-propanesulfonate}, or poly{4-(14'-acryloxy-3'-thia-1'-keto)tetradecyl phenyl boronic acid-co-sodium-4-styrene sulfonate}.

- 5 49. A method for reducing absorption of fat in a mammal in need of such treatment, comprising the step of orally administering to the mammal an effective amount of a polymer substituted with at least one group represented by Structural Formula (I) or (II):

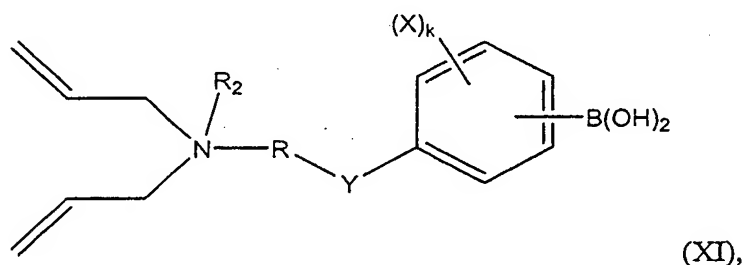
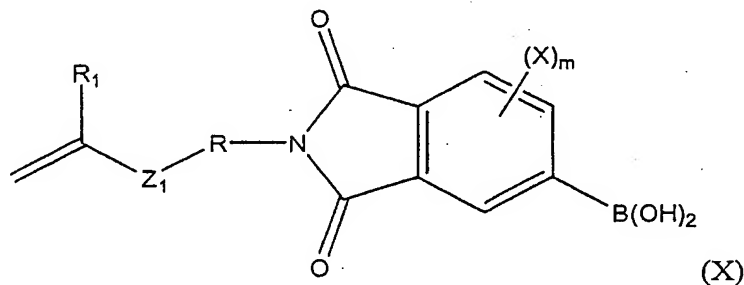
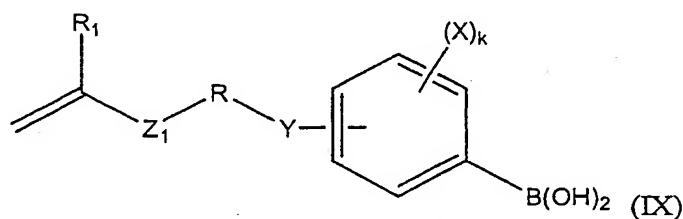


wherein:

R is a C₆-C₃₀ hydrocarbylene group optionally interrupted by one or more heteroatoms selected from the group consisting of NH, S and O;
 each X is independently -H, a substituted or unsubstituted alkyl group, an electron withdrawing group, or an electron donating group meta to the boronic acid moiety;
 Y is -C(O)Z-, -ZC(O)- or -S(CH₂)_n-;
 Z is a bond, CH₂S, S, NH, or O;
 m is an integer from 0 to 3;
 k is an integer from 0 to 4; and
 n is an integer from 0 to 5.

50. The method of Claim 49, further comprising the step of administering a fat binding polymer to the mammal.

51. A method for reducing absorption of fat in a mammal in need of such treatment, comprising the step of orally administering to the mammal an effective amount of a polymer comprised of polymerized monomer units, wherein the monomer unit is represented by Structural Formula (IX), (X), or (XI):



wherein:

R is a C6-C30 hydrocarbylene group optionally interrupted by one or more heteroatoms selected from the group consisting of NH, S and O;

R₁ is -H or a lower alkyl group;

R₂ is -H, a lower alkyl group, or is absent;

each X is independently -H, a substituted or unsubstituted alkyl group, or an electron withdrawing group;

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Y is $-C(O)Z-$, $-ZC(O)-$ or $-S(CH_2)_n-$;

Z is a bond, CH_2S , S, NH or O;

Z_1 is a bond, $-C(O)NH-$, $-C(O)O-$, $-C_6H_4O-$, or $-C_6H_4NHC(O)-$;

m is an integer from 0 to 3;

5

k is an integer from 0 to 4; and

n is an integer from 0 to 5.

52. The method of Claim 51, further comprising the step of administering a fat binding polymer to the mammal.

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53. The method of Claim 51, wherein the copolymer is poly{4-(14'-acryloxy-3'-thia-1'-keto)tetradecyl phenyl boronic acid-co-potassium 3-sulfopropyl acrylate}}, poly{4-(14'-methacryloxy-3'-thia-1'-keto)tetradecyl phenyl boronic acid-co-sodium 4-styrene sulfonate}, poly{11-acryloxyundecyl(4-boronato)bezoate-co-sodium 2-acrylamido-2-methyl-1-propanesulfonate}, poly{4-(14'-acryloxy-3'-thia-1'-keto)tetradecyl phenyl boronic acid-co-sodium 2-acrylamido-2-methyl-1-propanesulfonate}, or poly{4-(14'-acryloxy-3'-thia-1'-keto)tetradecyl phenyl boronic acid-co-sodium-4-styrene sulfonate}.

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